



EPIDEMIOLOGY AND FACTORS AFFECTING DELAY IN POST EXPOSURE PROPHYLAXIS OF ANIMAL BITE CASES ATTENDING AN ANTI RABIES CLINIC.

Medicine

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ABSTRACT

Background: Rabies being an endemic disease in India in general and Kashmir in particular, animal bite cases are rising enormously. Post exposure prophylaxis consequently increases as the bite cases increase, leading to a heavy financial burden to the state exchequer as well as individuals. No sufficient knowledge regarding factors associated with delay in post exposure prophylaxis of the bitten individuals is available at present.

Aim and Objectives: To study the epidemiology of animal bite cases presenting in anti-rabies clinic and find out factors associated with delay in post exposure prophylaxis.

Material and Methods: This was a prospective observational study conducted in an anti rabies clinic of a tertiary care hospital. The animal bite cases attending the clinic were interviewed and data was collected by using a semi-structured proforma. The questions pertained to demographic characteristics of animal bite cases, biter's profile, time and date of bite, class of bite, factors affecting delayed post exposure vaccination.

Results: A total of 232 cases were observed. Most of the bite cases were males (74.6%). The mean age of victims was 33.8 years (+ 18.89). Dogs were most frequent biters (96.55%). Most common bitten part was legs (59.1%) and left side of body more (51.7%) involved. 52.6% were class II bites followed by 47.4% in class III category. 66.8% had timely (0-6 hours) post exposure prophylaxis followed by 25.4% in (6-48 hours) and 7.8% got prophylaxis > 48 hours post exposure. The factors related to delayed prophylaxis were distance from the clinic, class of bite, residence.

Conclusion: Factors affecting the delay in seeking care is at large. Ways to reduce the delay should be sought for as rabies is a 100% fatal disease. A well placed robust health system giving due care to bitten cases is the need of the hour.

KEYWORDS

rabies, post exposure prophylaxis, observational study.

Introduction

Rabies is one among the important zoonotic diseases transmitted to various which harbors the bullet shaped virus from the family Rhabdoviridae. Rabies is endemic in India and as per a recent estimate 20,000 persons die every year by this disease¹. About 95% of deaths occur in Asia and Africa due to rabies in which 36% are from India². Dogs are mainly responsible for disease transmission in humans in India. The annual estimated dog bite cases in India is around 17.4 million leading to the 20000 cases of rabies in humans annually but rabies being a non notifiable disease this figure could be an underestimate as widely believed³. Rabies is fatal but preventable when timely and correct use of post exposure prophylaxis is provided to the exposed person.⁴ More than 15 million people receive post exposure vaccination every year in the world².

Materials and Methods

This was an observational study carried over a period of 6 weeks in anti rabies clinic of department of Community medicine GMC Srinagar which runs this clinic in SMHS hospital. The clinic is a referral centre and provides treatment to victims of animal bite cases. All cases of animal bites during this period were examined and interviewed by using a semi-structured pretested questionnaire. Informed consent was obtained from the victims. Age, gender, residence, injury location, side, type of animal, the extent of wound, time of bite, time of reporting, distance from clinic was assessed. 232 consecutive cases came to the referral center during this period.

Data was entered in excel and descriptive characteristics presented with statistics like mean±SD, percentages and proportions. Chi square and T- test was used for data analysis at the 5% significance level to determine any factors associated with delay in PEP in the study subjects.

Results:

Table I shows demographic and associated factors. In total 232 cases were registered having category II and III status of injury during this period with an average age of 33.8±18.89 of the bitten subjects. 25.4% subjects were females and 74.6% as males. The mean income of the study subjects was 19343.97(±6919.26). Dogs were the frequent biters in 96.55% of the cases. Most common part bitten was legs in 137 subjects. Left side of body bitten in 51.7% cases. The subjects belonging to class II category were 52.6% followed by 47.4% in class III. In total 66.8% subjects got timely PEP followed by 33.2% getting delayed PEP. 65.1% of the cases belonged to urban areas. As per Table II the delayed PEP was associated with residence (p=0.000), class of bite (p=0.00), distance from the clinic (0.00). No significant relation found with sex, income.

Table I

Sex	Number	Percentage
Males	173	74.6%
Females	59	25.4%
Residence of the subjects		
Urban	151	65.1%
Rural	81	34.9%
Biting animal		
Dog	224	96.55%
Others	8	3.45%
Site of bite		
Upper extremities	169	27.16%
Lower extremities	63	72.84%
Category of bite		
Class II	122	52.6%
Class III	110	47.4%
Time Lag		
Timely PEP(0-6 hours)	155	66.8%
>6 hours	77	33.2%

Table II Relationship between time of PEP and different variables

Variable	On time PEP	Delayed PEP	p -Value
Category of bite	107	15	0.000
Class II	48	62	
Class III			
Residence	5	76	0.000
Rural	150	1	
Urban			
Distance from the clinic	146	5	<0.00
< 20 Km	8	68	
> 20 Km			

Discussion

The study revealed that 33.2% of the participants received delayed post exposure prophylaxis but it was much lower than a similar study conducted in Iran by Salman et al which found a rate of only 37.2% of timely PEP⁵. Similar study reported from China showed less rate of delayed PEP in bitten individuals (35.3%) consistent with our study⁶.

This study found a strong relationship between distance from the clinic, residence, category of bite with delayed PEP. However, income and sex was not having a significant relation. Our study strongly suggests the role of distance which remains a cause of concern as the chances of rabies will increase with the delayed PEP. More centers for rabies prevention and control can suffice at this level. Furthermore, there can be lack of awareness in the subjects which needs to be further evaluated. The present study showed that dogs (96.55%) are responsible in particular which has also been reported by a multicentric study conducted in India⁷. Dog population has risen enormously leading to a bigger burden of bitten individuals through more chances of dog human interaction. Environmental sanitation, safe disposal of solid wastes and its management is lacking which has led to increased dog population.

Conclusion

This study provides an insight into the facts of animal bites and PEP, which can be further explored to manage animal bites and control rabies in humans. The interventions targeted for rabies prevention and control could be more centers in periphery/rural areas with awareness generation mechanisms. The findings of dog being the common biter needs a multi pronged strategy to decrease dog population thereby decreasing dog human interaction.

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